

television sound signal or background music is selectively used by the user.

The audio message generator **600** has a functional element necessary for a call automatic response mode and transmits an audio message representing "user not home". In other words, the user selects the automatic response function so that a "user not home" guiding message is transmitted for the incoming call received when the user is not home.

In a state where the automatic response function is selected, the modem **300** counts the number of rings and transmits the result to the main controller **200**. If the phone rings a predetermined number of times, the main controller **200** transmits the interrupt signal to the CPU **100**.

If the interrupt signal is input, the CPU **100** drives the audio message generator **600** via the main controller **200**. The "user not home" guiding audio signal stored in the audio message generator **600** is transmitted to the modem **300** to then be transferred to the caller.

Therefore, if there is an incoming call received when the user is not home in a state where the automatic response function is selected, the audio message is automatically transmitted to the caller. When the automatic response function is not necessary, it is disabled so that the user can pick up the telephone directly.

A ROM pack interface **700** is a socket for a later function extension, to which terminals for transmitting and receiving data of the CPU **100**, an address signal and various control signals are connected.

The ROM pack inserted into the ROM pack interface **700** is constituted by a ROM and a storage memory. If the ROM pack is externally installed, the main controller **200** detects and notifies the CPU **100** of the external ROM pack installation.

After recognizing the ROM pack installation, the CPU **100** reads a ROM header data of the ROM pack, analyzes functions of the corresponding ROM, moves the program region related thereto to the ROM pack and performs the functions stored in the ROM pack.

Therefore, the functions which have not been described in the embodiments of the present invention can be effected by performing the functions stored in the ROM pack via the ROM pack interface **700**.

As described above, according to the present invention, an information communication service can be rendered using a television without a personal computer.

Also, a desired song can be transmitted at any time to allow a karaoke mode to be enjoyed at home, by incorporating a communication karaoke function into the intelligent television receiver according to the present invention.

Further, if an error is generated in song data received during a karaoke mode, the transmission fee for the corresponding song is not counted to prevent imposition of an unfair charge to the user.

When the mode is converted from a television mode to a communication mode, the present invention provides various functions, e.g., a background music output or an audio message output.

Also, the present invention allows functions to be extended by installing a ROM pack interface to insert a ROM pack having a function extension program.

What is claimed is:

1. An intelligent television receiver, operable with a value added network (VAN), for receiving a signal of a desired channel and displaying the signal on a CRT, said intelligent television receiver comprising:

a modem for transmitting and receiving information data according to connection command data when the intelligent television receiver is connected with the VAN via a communication cable; and

an information processing unit for outputting said connection command data if a communication mode is set in the intelligent television receiver, for decoding said information data transmitted from the VAN to said modem to display said information data on the CRT, and for transmitting command data necessary for the transmission and reception of said information data to said modem.

2. An intelligent television receiver, operable with a value added network (VAN), for receiving a signal of a desired channel and displaying the signal on a CRT, said intelligent television receiver comprising:

a tuner for converting a radio frequency (RF) signal of the desired channel received via an antenna into an intermediate frequency (IF) signal;

an IF amplifier for amplifying said IF signal to output the amplified signal as an IF video signal and an IF sound signal;

a modem for transmitting and receiving information data according to connection command data when the intelligent television receiver is connected with the VAN via a communication cable;

an information processing unit for outputting said connection command data if a communication mode is set in the intelligent television receiver, for generating first through third control signals according to at least one of a television and communication mode set in the intelligent television receiver, for generating a composite sync signal synchronized to said information data, for decoding said information data transmitted from said modem to output the information data as an information video signal and an information sound signal as background music in case the communication mode is set in the intelligent television receiver;

a television microcomputer for generating a mode control signal for signal processing in the television receiver in accordance with a user input, and for transmitting the mode control signal to said information data processing unit and for receiving data from said information processing unit;

a first selector for selecting one of: a) the composite sync signal output from said information processing unit and b) the IF video signal output from said IF amplifier in accordance with the first control signal generated by said information processing unit;

a video signal processor for processing the signal selected by said first selector to output a video signal and horizontal and vertical sync signals;

a second selector for selecting one of: a) the information video signal output from said information processing unit and b) the video signal output from said video signal processor in accordance with the second control signal generated by said information processing unit;

a CRT driver for driving said CRT in accordance with said horizontal and vertical sync signals output from said video signal processor;

a sound signal processor for processing said IF sound signal; and

a third selector for selectively outputting one of: a) the information sound signal output from said information processing unit and b) the IF sound signal output from

said sound signal processor in accordance with the third control signal generated by said information processing unit.

3. An intelligent television receiver as claimed in claim 2, wherein said third selector mutes all sound signals if the mode control signal corresponds to the communication mode. 5

4. An intelligent television receiver as claimed in claim 2, wherein said third selector selects the information sound signal output from said information processing unit in both television and communication modes. 10

5. An intelligent television receiver, operable with a value added network (VAN), for receiving a signal of a desired channel and displaying the signal on a CRT, said intelligent television receiver comprising:

- a tuner for converting a radio frequency (RF) signal of the desired channel received via an antenna into an intermediate frequency (IF) signal; 15
- an IF amplifier for amplifying said IF signal to output the amplified signal as an IF video signal and an IF sound signal; 20
- an information processing unit for recognizing a mode of the intelligent television receiver, for receiving information data of a graphic or text state and decoding the information data, said information processing unit comprising: 25
 - a program ROM in which programs and data necessary for the operation of said information processing unit are stored;
 - a CPU for performing control of said information processing unit, data transmission and operations by said programs stored in said program ROM; 30
 - a main controller for recognizing the mode set by a user and for generating connection command data, for generating first through third control signals, and for generating a composite sync signal synchronized with said information data, and having a graphic data processing function with respect to said information data; 35
 - a RAM/DAC for receiving the graphic data of said main controller, for reading RGB data from an internal palette RAM, for converting the graphic data into an analog information signal and for outputting the graphic data to the CRT; 40
 - a memory for reading and writing the information data under the control of said main controller; and 45
 - a modem for transmitting and receiving information data according to the connection command data when the intelligent television receiver is connected with the VAN via a communication cable; 50
- a television microcomputer for generating a mode control signal in the television receiver corresponding to at least one of a communication mode and a television mode in accordance with a user input, and for transmitting the mode control signal to said information processing unit to and receiving data from said information processing unit; 55
- a first selector for selecting one of: a) the composite sync signal output from said information processing unit and b) the IF video signal output from said IF amplifier in accordance with the first control signal generated by said main controller; 60
- a video signal processor for processing the signal selected by said first selector to output an RGB signal and horizontal and vertical sync signals; 65
- a second selector for selecting one of: a) the analog information signal output from said information pro-

cessing unit and b) the RGB signal from said video signal processor in accordance with said second control signal generated by said main controller;

a CRT driver for driving said CRT in accordance with said horizontal and vertical sync signals output from said video signal processor;

a sound signal processor for processing said IF sound signal; and

a third selector for muting a sound signal output from said sound signal processor in the communication mode, and outputting said sound signal in case of the television mode in accordance with the third control signal generated by said main controller.

6. An intelligent television receiver as claimed in claim 5, wherein said information processing unit further comprises: a background music generator for generating background music; and

wherein said third selector outputs said background music under the control of said main controller when the mode set by the user is the communication mode.

7. An intelligent television receiver as claimed in claim 5, wherein a telephone is connected to said modem via a second communication cable so that said modem detects whether said telephone is on or off hook, detects a key tone of said telephone, and transmits a key number to said CPU via said second communication cable.

8. An intelligent television receiver as claimed in claim 7, wherein said information processing unit further comprises:

an audio message generator for generating a "user not home" guiding message under the control of said main controller if there is an incoming call when an automatic response function mode is selected by a user; and

wherein said "user not home" guiding message of said audio message generator is transmitted to a caller via said modem.

9. An intelligent television receiver as claimed in claim 5, wherein said information processing unit further comprises:

a ROM pack interface for interfacing a socket to which a data terminal, address signal terminal, and control signal terminal are connected with a ROM pack inserted into said socket; and

wherein installation of said ROM pack is detected by said main controller and recognized by said CPU so that functions stored in said ROM pack are operable with said CPU.

10. An intelligent television receiver as claimed in claim 5, wherein said video signal processor processes the IF video signal and outputs the RGB signal, horizontal and vertical sync signals, if the signal selected by said first selector is the IF video signal, and filters the composite sync signal if said selected signal is the composite sync signal and outputs said horizontal and vertical sync signals to said main controller.

11. An intelligent television receiver as claimed in claim 5, wherein said memory includes a volatile memory and a storage memory and wherein if said volatile memory becomes full of data received through said modem, said data stored in said volatile memory is moved to and stored in said storage memory to allow real time processing of data received from said modem.

12. An intelligent television receiver as claimed in claim 5, wherein said main controller supplies the composite sync signal and the first control signal generated by an internal sync signal generator to said first selector, controls the composite sync signal to be selected in case of the communication mode, and controls the IF video signal to be selected in case of the television or television and communication mode.

13. An intelligent television receiver as claimed in claim 5, wherein said main controller supplies the second control signal to said second selector, controls the RGB data output from said RAM/DAC to be output on the entire screen of the CRT in the case of the communication mode, controls the RGB signal output from said video signal processor to be output on the entire screen of the CRT in case of the television mode, and controls the RGB data output from said RAM/DAC to be selectively displayed on a portion of the CRT in case of the television and communication mode.

14. An intelligent television receiver as claimed in claim 5, wherein said main controller supplies the third control signal to said third selector so that the IF sound signal processed by said sound signal processor is output during both television mode and communication mode.

15. An intelligent television receiver as claimed in claim 5, wherein said main controller communicates data between said CPU and said television microcomputer, and in communicating between said CPU and said television microcomputer, said main controller converts parallel data of a byte unit output from said CPU into serial data and transmits said serial data to said television microcomputer, and converts serial data received from said television microcomputer into parallel data of a byte unit and transmits said parallel data to said CPU.

16. An intelligent television receiver, operable with a value added network (VAN), for receiving a signal of a desired channel and displaying the signal on a CRT, said intelligent television receiver comprising:

- a tuner for converting a radio frequency (RF) signal of the desired channel received via an antenna into an intermediate frequency (IF) signal;
- an IF amplifier for amplifying said IF signal to output the amplified signal as an IF video signal and an IF sound signal;
- an information processing unit for recognizing a mode of the intelligent television receiver, for receiving and decoding information data of a graphic or text state and for performing a karaoke function, said information processing unit comprising:
 - a program ROM in which programs and data necessary for the operation of said information processing unit and karaoke function are stored;
 - a CPU for performing control of said information processing unit, data transmission and operations by said programs stored in said program ROM;
 - a main controller for recognizing the mode set by a user for generating connection command data, and for generating first through third control signals, said main controller having an information data reception function, a display function and a graphic data processing function, said main controller decoding information data for the karaoke function and outputting the karaoke data as decoded scenery information and decoded MIDI data;
 - a RAM/DAC for receiving the graphic data of said main controller, for reading RGB data from an internal palette RAM, for converting the graphic data into an analog information signal and for outputting the graphic data to the CRT;
 - a memory for reading and writing the information data and karaoke data under the control of said main controller;
 - a modem for transmitting and receiving information data according to the connection command data when the intelligent television receiver is connected with the VAN via a communication cable;

- a graphic ROM for compressing and storing the scenery information for the karaoke function; and
- an accompaniment signal generator for outputting said decoded MIDI data as an accompaniment signal;
- a television microcomputer for generating a mode control signal in the television receiver corresponding to at least one of a television and a communication mode, said communication mode including a karaoke mode, in accordance with a user input and for transmitting the mode control signal to said information processing unit and for receiving data from said information processing unit;
- a first selector for selecting one of: a) a composite sync signal output from said information processing unit and b) the IF video signal output from said IF amplifier in accordance with the first control signal generated by said main controller;
- a video signal processor for processing the signal selected by the first selector to output an RGB signal and horizontal and vertical sync signals;
- a second selector for selecting one of: a) the analog information signal output from said information processing unit and b) the RGB signal output from said video signal processor in accordance with the second control signal generated by the main controller;
- a CRT driver for driving said CRT in accordance with said horizontal and vertical sync signals output from said video signal processor;
- a sound signal processor for processing said IF sound signal; and
- a third selector for outputting said accompaniment signal output from said accompaniment signal generator in accordance with said third control signal in the case of said karaoke mode, and outputting said sound signal output from said sound signal processor in the case of the television mode.

17. An intelligent television receiver as claimed in claim 16, wherein said information processing unit further comprises:

- a background music generator for generating background music;

wherein said third selector outputs said background music under the control of said main controller when the mode is converted into the communication mode.

18. An intelligent television receiver as claimed in claim 16, wherein a telephone is connected to said modem via a second communication cable so that said modem detects whether said telephone is on or off hook, detects a key tone of said telephone, and transmits a key number to said CPU via said second communication cable.

19. An intelligent television receiver as claimed in claim 18, wherein said information processing unit further comprises:

- an audio message generator for generating a "user not home" guiding message under the control of said main controller if there is an incoming call when an automatic response function mode is selected by a user; and
- wherein said "user not home" guiding message of said audio message generator is transmitted to a caller via said modem.

20. An intelligent television receiver as claimed in claim 16, wherein said information processing unit further comprises:

- a ROM pack interface for interfacing a socket to which a data terminal, address signal terminal, and control

21

signal terminal are connected with a ROM pack inserted into said socket; and wherein installation of said ROM pack is detected by said main controller and recognized by said CPU so that functions stored in said ROM pack are operable with said CPU. 5

21. An intelligent television receiver as claimed in claim 16, wherein said video signal processor processes the IF video signal and outputs the RGB signal, and horizontal and vertical sync signals, if the signal selected by said first selector is the IF video signal, filters the composite sync signal if said selected signal is the composite sync signal and outputs said horizontal and vertical sync signals to said main controller. 10

22. An intelligent television receiver as claimed in claim 16, wherein said memory includes a volatile memory and a storage memory and wherein if said volatile memory becomes full of data received through said modem, said data stored in said volatile memory is moved to and stored in said storage memory to allow real time processing of data received from said modem. 15 20

23. An intelligent television receiver as claimed in claim 16, wherein said main controller supplies the composite sync signal and the first control signal generated by an internal sync signal generator to said first selector, controls the composite sync signal to be selected in case of the communication mode, and controls the IF video signal to be selected in the case of the television or television and communication mode. 25

24. An intelligent television receiver as claimed in claim 16, wherein said main controller controls the RGB data output from said RAM/DAC to be output on the entire screen of the CRT in the case of the communication mode, controls the RGB signal output from said video signal processor to be output on the entire screen of the CRT in the case of the television mode, and controls the RGB data output from said RAM/DAC to be selectively displayed on a portion of the CRT in case of the television and communication mode. 30 35

25. An intelligent television receiver as claimed in claim 16, wherein said main controller supplies the third control signal to said third selector so that the IF sound signal processed by said sound signal processor is output during both television mode and communication mode. 40

26. An intelligent television receiver as claimed in claim 16, wherein said main controller communicates data between said CPU and said television microcomputer and in communicating between said CPU and said television microcomputer, said main controller converts parallel data of a byte unit, output from said CPU, into serial data and transmits said serial data to said television microcomputer, and converts serial data received from said television microcomputer into parallel data of a byte unit and transmits said parallel data to said CPU. 45 50

27. A method of processing information data in an intelligent television receiver, operable with a value added network (VAN), said television receiver receiving and decoding information data of a graphic or text state, said method comprising the steps of: 55

- (a) setting a communication mode; 60
- (b) selecting a communication item if said communication mode is set;
- (c) connecting the television receiver to the VAN when said communication item is selected;
- (d) receiving information data from the VAN depending on said selected communication item when the television receiver is connected with the VAN; 65

- (e) determining whether an error is generated in said received information data;
- (f) requesting retransmission of said information data if an error is generated in said received information data in said step (e);
- (g) decoding said received data if an error is not generated in said received information data in said step (e);
- (h) displaying said decoded information data on a CRT of said intelligent television receiver;
- (i) checking for a command depending on key inputs while performing said step (h);
- (j) transmitting the command checked in said step (i) to the VAN if said command concerns a communication mode for said television receiver; and
- (k) disconnecting a line and converting the mode of the television receiver into a television mode if said command is a connection completion command.

28. An information data processing method as claimed in claim 27, wherein said step (c) comprises the sub-steps of:

- (c1) transmitting a command for establishing a connection with the VAN;
- (c2) determining whether the connection with the VAN is performed;
- (c3) repeating attempts to connect with said VAN a predetermined number of times if the connection is not performed in said step (c2);
- (c4) displaying an error message if connection is not obtained within said predetermined number of times in said step (c3); and
- (c5) communicating said communication item to the VAN when connection with the VAN is performed in one of steps (c2) and (c3).

29. An information data processing method as claimed in claim 27, wherein said step (d) comprises the sub-steps of:

- (d1) receiving and demodulating data from the VAN at a predetermined transmitting and receiving speed;
- (d2) error-correction demodulating data demodulated in said step (d1);
- (d3) storing said error-correction demodulated data in a buffer; and
- (d4) generating an interrupt signal if said buffer is full of data in said step (d3).

30. A method of processing information data in a communication karaoke mode of an intelligent television receiver, said intelligent television receiver operable with a value added network (VAN) and transmitting and receiving information data from the VAN, said method comprising the steps of:

- (a) setting said communication karaoke mode;
- (b) selecting a desired song data;
- (c) receiving said selected song data from the VAN;
- (d) determining whether an error is generated in said received selected song data;
- (e) processing said song data if an error is not generated in said received song data in said step (d); and
- (f) requesting retransmission of song data if an error is generated in said received song data in said step (d).

31. An information data processing method as claimed in claim 30, wherein said step (e) comprises the sub-steps of:

- (e1) decoding said received song data into MIDI data and graphic data;
- (e2) outputting the MIDI data decoded in said step (e1) as accompaniment music; and

(e3) outputting the graphic data as scenery information decoded in said step (e1) as a background screen.

32. A method of processing information data in a communication karaoke mode of an intelligent television receiver, said intelligent television receiver operable with a value added network (VAN) and transmitting and receiving information data from the VAN, said method comprising the steps of:

- (a) setting said communication karaoke mode;
 - (b) selecting a desired song data; 10
 - (c) receiving said selected song data from the VAN;
 - (d) determining whether said received selected song data is received without an error;
 - (e) processing said song data if said song data is received without an error in said step (d); 15
 - (f) transmitting a code signal to invalidate a counted service fee if an error is generated in said received song data;
-

(g) canceling the transmission fee corresponding to a error-bearing song; and

(h) requesting retransmission of said selected song data.

33. An information data processing method as claimed in claim 32, wherein in said step (g), the transmission fee is canceled, if said counted fee invalidating code signal is received in the VAN.

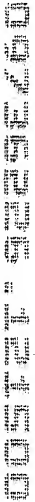
34. An information data processing method as claimed in claim 32, wherein said step (e) comprises the sub-steps of:

(e1) decoding said received song data into MIDI data and graphic data;

(e2) outputting the MIDI data decoded in said step (e1) as an accompaniment music; and

(e3) outputting the graphic data as scenery information decoded in said step (e1) as a background screen.

* * * * *



IN THE CLAIMS:

Kindly add the following new claims:

35. A television receiver, operable with networks, for receiving a signal of a desired channel and displaying the signal on a display device, said television receiver comprising:

a modem for transmitting and receiving information data according to connection command data when the television receiver is connected with a network via a communication cable; and

an information processing unit for outputting said connection command data if a communication mode is set in the television receiver, for decoding said information data transmitted from the network to said modem to display said information data on the display device.

36. A television receiver according to claim 35, wherein said information processing unit generates a composite sync signal synchronized with said information data, said receiver further comprising:

a tuner for converting a radio frequency signal of a desired channel received via an antenna into an intermediate frequency (IF) signal;

an IF amplifier for amplifying said IF signal to output the amplified signal as an IF video signal; and

a selector for selecting one of the a) composite sync signal output from the information processing unit and b) the IF video signal output from said IF amplifier in accordance with a first control signal generated by said information processing unit.

37. A television receiver according to claim 36, wherein the display device outputs a display based on a signal selected by said selector.

38. A television receiver according to claim 36, wherein said information processing unit includes a main controller which has a graphic data processing function with respect to said information data, said receiver further comprising:

a video signal processor for processing the signal output by said selector to output an RGB signal and horizontal and vertical sync signals, wherein said video signal processor processes the IF video signal and outputs the RGB signal, horizontal and vertical sync signal if the signal selected by said selector is the IF video signal and filters the composite sync signal if the signal selected by said selector is the composite signal and outputs the horizontal and vertical sync signals to said main controller.

39. A television receiver according to claim 35, wherein said information processing unit includes a memory for reading and writing the information data, wherein said memory includes a volatile memory and a storage memory and wherein if said volatile memory becomes full of data received through said modem, said data stored in said volatile memory is moved to and stored in said storage memory to allow real time processing of

data received from said modem.

40. The television receiver according to claim 36, wherein said information wherein said information processing unit includes a main controller which has a graphic data processing function with respect to said information data, wherein said main controller supplies the composite sync signal to said selector and controls the composite sync signal to be selected in case a communication mode is set and controls the IF video signal to be selected in case a television or television and communication mode is set.

41. The television receiver according to claim 35, wherein said modem performs error-correction coding on said information data, and if said information data includes an error such that the information data cannot be decoded by said information processing unit, said information processing unit transmits a cancellation request to the network.

42. A television receiver, operable with networks, for receiving a signal of a desired channel and displaying the signal on a display device, said television receiver comprising:

a modem for transmitting and receiving information data according to connection command data when the television receiver is connected with a network via a communication cable; and

an information processing unit for outputting said connection command data if a communication mode is set in the television receiver, for decoding said information data

transmitted from the network to said modem to display said information data on the display device and for transmitting command data necessary for the transmission and reception of said information data to said modem.

43. A television receiver according to claim 42, wherein said information processing unit generates a composite sync signal synchronized with said information data, said receiver further comprising:

a tuner for converting a radio frequency signal of a desired channel received via an antenna into an intermediate frequency (IF) signal;

an IF amplifier for amplifying said IF signal to output the amplified signal as an IF video signal; and

a selector for selecting one of the a) composite sync signal output from the information processing unit and b) the IF video signal output from said IF amplifier in accordance with a first control signal generated by said information processing unit.

44. A television receiver according to claim 43, wherein the display device outputs a display based on a signal selected by said selector.

45. A television receiver according to claim 43, wherein said information processing unit includes a main controller which has a graphic data processing function with respect to said information data, said receiver further comprising:

a video signal processor for processing the signal output by said selector to output an RGB signal and horizontal and vertical sync signals, wherein said video signal processor processes the IF video signal and outputs the RGB signal, horizontal and vertical signals if the signal selected by said selector is the IF video signal and filters the composite sync signal if the signal selected by said selector is the composite signal and outputs the horizontal and vertical sync signals to said main controller.

46. A television receiver according to claim 42, wherein said information processing unit includes a memory for reading and writing the information data, wherein said memory includes a volatile memory and a storage memory and wherein if said volatile memory becomes full of data received through said modem, said data stored in said volatile memory is moved to and stored in said storage memory to allow real time processing of data received from said modem.

47. The television receiver according to claim 43, wherein said information processing unit includes a main controller which has a graphic data processing function with respect to said information data, wherein said main controller supplies the composite sync signal to said selector and controls the composite sync signal to be selected in case a communication mode is set and controls the IF video signal to be selected in case a television or television and communication mode is set.

48. The television receiver according to claim 42, wherein said modem performs error-

correction coding on said information data, and if said information data includes an error such that the information data cannot be decoded by said information processing unit, said information processing unit transmits a cancellation request to the network.

49. A television receiver, operable with networks, for receiving a signal of a desired channel, said television receiver comprising:

a modem for transmitting and receiving information data according to connection command data via a communication cable; and

an information processing unit for outputting said connection command data if a communication mode is set in the television receiver, for decoding said information data transmitted from a network to said modem, and for transmitting command data necessary for the transmission and reception of said information data to said modem.

50. A television receiver according to claim 49, wherein said information processing unit generates a composite sync signal synchronized with said information data, said receiver further comprising:

a tuner for converting a radio frequency signal of a desired channel received via an antenna into an intermediate frequency (IF) signal;

an IF amplifier for amplifying said IF signal to output the amplified signal as an IF video signal; and

a selector for selecting one of the a) composite sync signal output from the

information processing unit and b) the IF video signal output from said IF amplifier in accordance with a first control signal generated by said information processing unit.

51. A television receiver according to claim 50, further including a display device, wherein the display device outputs a display based on a signal selected by said selector.

52. A television receiver according to claim 50, wherein said information processing unit includes a main controller which has a graphic data processing function with respect to said information data, said receiver further comprising:

a video signal processor for processing the signal output by said selector to output an RGB signal and horizontal and vertical sync signals, wherein said video signal processor processes the IF video signal and outputs the RGB signal, horizontal and vertical signals if the signal selected by said selector is the IF video signal and filters the composite sync signal if the signal selected by said selector is the composite signal and outputs the horizontal and vertical sync signals to said main controller.

53. A television receiver according to claim 49, wherein said information processing unit includes a memory for reading and writing the information data, wherein said memory includes a volatile memory and a storage memory and wherein if said volatile memory becomes full of data received through said modem, said data stored in said volatile memory is moved to and stored in said storage memory to allow real time processing of data received from said modem.

54. The television receiver according to claim 50, wherein said information processing unit includes a main controller which has a graphic data processing function with respect to said information data, wherein said main controller supplies the composite sync signal to said selector and controls the composite sync signal to be selected in case a communication mode is set and controls the IF video signal to be selected in case a television or television and communication mode is set.

55. The television receiver according to claim 49, wherein said modem performs error-correction coding on said information data, and if said information data includes an error such that the information data cannot be decoded by said information processing unit, said information processing unit transmits a cancellation request to the network.

56. A television receiver, operable with networks, for receiving at least one of a video signal and information data of a desired network and displaying at least one of the video signal and the information data on a display device, said television receiver comprising:

a modem for transmitting and receiving at least one of the video signal and the information data according to connection command data when the television receiver is connected with a network via a communication cable; and

an information processing unit for outputting said connection command data if a communication mode is set in the television receiver, for decoding at least one of the video signal and information data transmitted from the network to said modem to display

at least one of the video signal and information data on the display device.

57. A television receiver according to claim 56, wherein said information processing unit generates a composite sync signal synchronized with said information data, said receiver further comprising:

a tuner for converting a radio frequency signal of a desired channel received via an antenna into an intermediate frequency (IF) signal;

an IF amplifier for amplifying said IF signal to output the amplified signal as an IF video signal; and

a selector for selecting one of the a) composite sync signal output from the information processing unit and b) the IF video signal output from said IF amplifier in accordance with a first control signal generated by said information processing unit.

58. A television receiver according to claim 57, wherein the display device outputs a display based on a signal selected by said selector.

59. A television receiver according to claim 56, wherein said information processing unit includes a main controller which has a graphic data processing function with respect to said information data, said receiver further comprising:

a video signal processor for processing the signal output by said selector to output an RGB signal and horizontal and vertical sync signals, wherein said video signal processor processes the IF video signal and outputs the RGB signal, horizontal and

vertical signal and outputs the RGB signal, horizontal and vertical sync signals if the signal selected by said selector is the IF video signal and filters the composite sync signal if the signal selected by said selector is the composite signal and outputs the horizontal and vertical sync signals to said main controller.

60. A television receiver according to claim 56, wherein said information processing unit includes a memory for reading and writing the information data, wherein said memory includes a volatile memory and a storage memory and wherein if said volatile memory becomes full of data received through said modem, said data stored in said volatile memory is moved to and stored in said storage memory to allow real time processing of data received from said modem.

61. The television receiver according to claim 57, wherein said information processing unit includes a main controller which has a graphic data processing function with respect to said information data, wherein said main controller supplies the composite sync signal to said selector and controls the composite sync signal to be selected in case a communication mode is set and controls the IF video signal to be selected in case a television or television and communication mode is set.

62. The television receiver according to claim 56, wherein said modem performs error-correction coding on said information data, and if said information data includes an error such that the information data cannot be decoded by said information processing unit,

U.S.P. 5,850,265

said information processing unit transmits a cancellation request to the network.

[illegible]